ABSTRACT

To study the efficacy of thymus and activation-regulated chemokine (TARC) as a diagnostic marker of atopic dermatitis (AD) and its association with the severity of the disease in the pediatric age group in the Indian context

Objectives:

(i)To study the efficacy of serum TARC as a diagnostic marker of AD and its association with the severity of disease in the pediatric age group (0-16years) in Indian patients and, (ii) to study the clinical profile of patients with AD.

Secondary objective was to study the quality of life of patients with AD and its correlation with serum TARC.

Methods:

A case-control study was conducted in a tertiary-hospital in India from December-2016 to June-2018. Children with AD and controls with diseases mimicking AD (psoriasis, scabies, contact dermatitis, seborrheic dermatitis, impetigo) were recruited. The British Working Party criteria was used to diagnose AD. TARC was measured using Abcam's Human ELISA kit. Severity and quality of life (QOL) were assessed by SCORAD index and Infants' Dermatitis Quality of Life index (IDQOL) or Children's Dermatology Life Quality Index (CDLQI). Receiver-operating-characteristic curve was plotted for optimal cut-off value for TARC and correlation was determined using Pearson-correlation-coefficient.

Results:

103 (65-males,38-females) cases and 70 (38-males,32-females) controls were recruited with mean age (years) of 6.06 and 6.52, respectively. AD manifested by 1 year of age in 57.3% and by 5 years in 89.3% of children, the face being the most common site affected (83,80.6%). Acute eczema was present in 70/103 (68%) with or without lichenification (56,54.3%). The median TARC level was 519pg/mL (range 14-2503pg/mL) in cases and 319pg/mL (range 46-2500pg/mL) in controls (p-value 0.004). Serum TARC level of 365pg/mL was obtained as the cut-off for diagnosis of AD (children>2years) (sensitivity-57.7%, specificity-72.3%, positive-predictive-value-77.6%,negative-predictive-value-50.8%). The mean SCORAD index was 37.21$\pm$ 22.0. This correlated with TARC levels in children>2years (p-values<0.001). TARC levels correlated significantly with QOL indices in children>2years (IDQOL-r=0.823,p-value=0.003 and CLDQI-r=0.380,p-value=0.001). There was no significant correlation between TARC levels, SCORAD index and QOL indices in children below 2 years.

Conclusion:

The clinical profile of our patients was similar to previous studies. Our results suggest that serum TARC is a useful adjunct to the clinical criteria for the diagnosis of AD and correlates with the severity of disease as well and can, therefore, provide an objective assessment of severity in AD.

KEYWORDS:

Atopic dermatitis, clinical profile, thymus and activation-regulated chemokine, SCORAD, quality of life.